#4 sighting object is unable to be brought into focus in a measurement mode in which a target is set at an arbitrary point.

29. (Once Amended - Clean Text) The surveying instrument according to claim 17, #5 wherein said body of said surveying instrument comprises said sighting telescope;

wherein said sighting telescope comprises an erecting optical system positioned behind said focusing lens group; and

wherein said light guide comprises a beam splitting optical member attached to a surface of said erecting optical system.

REMARKS

Initially, Applicants would like to express their appreciation to the Examiner for the detailed Official Action provided, for the indication that the drawings filed on August 27, 2001, are acceptable in the Official Action, for the acknowledgment of receipt of Applicants' Information Disclosure Statement, and consideration of the cited documents, by return of the Form PTO-1449, and for the acknowledgment of Applicants' Claim for Priority and receipt of the certified copies of the priority documents in the Official Action.

Upon entry of the above amendments, claims 1, 3, 4, 8, 10, 11, 12 and 29 will have been amended. Claims 1-30 are currently pending. Applicants respectfully request reconsideration of the outstanding rejections, and allowance of all the claims pending in the present application.

On pages 2-7 of the Official Action, claims 1-30 were rejected under 35 U.S.C. § 102(b) as being anticipated by NAKAMURA et al. (U.S. Patent No. 5,877,892).

Applicants respectfully traverse the rejection of claims 1-6 under 35 U.S.C. § 102(b).

Claim 1, as presently amended, includes, inter alia, " . . . a distance measuring system which measures a distance to said sighting object, and outputs first data; a phase detection autofocus system which detects a focus state of an image of said sighting object on a reference focal plane, and outputs second data; a controller which determines reliability of the said first data and said second data; and an AF driver which moves a focusing lens of said sighting telescope optical system to bring said sighting object into focus in accordance with one of said first data and said second data which has been determined to be reliable by said controller."

Applicants submit that NAKAMURA et al. fails to disclose *a controller which determines reliability of first data output from distance measuring system and second data output from a phase detection autofocus system*. Applicants further submit that

NAKAMURA et al. fails to disclose *an AF driver which moves a focusing lens of a sighting telescope optical system to focus in accordance with such first data or such second data which has been determined to be reliable by the controller.*

In this regard, Applicants note that NAKAMURA et al. discloses different embodiments having distance measuring devices and autofocus devices. However, Applicants submit that none of the embodiments disclosed in NAKAMURA et al. include a controller which *determines reliability of data output from a distance measuring system and a phase detection autofocus system*, or an AF driver which moves a focusing lens to focus *in accordance with such data which has been determined to be reliable by the controller*. Note, for example, the embodiments shown in Figures 1 through 6 of the present application.

Applicants also submit that dependent claims 2-7, which are patentable at least due to their dependency from claim 1, for the reasons noted above, recite additional features of the invention and are also separately patentable over the prior art of record. For example, it is clear that NAKAMURA et al. lacks at least the additional subject matter recited in claims 2-4.

Claim 8, as presently amended, includes, inter alia, " . . . a distance measuring system which measures a distance to said sighting object; a phase detection autofocus system which detects a focus state of an image of said sighting object on a reference focal

plane; an AF driver which moves a focusing lens of said sighting telescope optical system to bring said sighting object into focus in accordance with an output of said phase detection autofocus system; a selector for setting a consecutive distance measurement mode in which said distance measuring system performs plural measurements of distances to said sighting object; and a controller which coordinates focusing operations of said AF driver with distance measuring operations of said distance measuring system in the consecutive distance measurement mode."

Applicants submit that NAKAMURA et al. fails to disclose *a selector for setting a consecutive distance measurement mode in which a distance measuring system performs plural measurements*. Applicants further submit that NAKAMURA et al. fails to disclose *a controller which coordinates focusing operations of an AF driver with distance measuring operations of a distance measuring system in a consecutive distance measurement mode.*

In this regard, Applicants note that NAKAMURA et al. discloses different embodiments having distance measuring devices and autofocus devices. However, Applicants submit that none of the embodiments disclosed in NAKAMURA et al. include a *selector* for setting a *consecutive distance measurement mode* in which *plural measurements* are performed by a distance measuring system, or a controller which *coordinates focusing operations of an AF driver with distance measuring operations of a*

distance measuring system in a consecutive distance measurement mode. Note, for example, the embodiments shown in Figures 7 through 9 of the present application.

Applicants also submit that dependent claims 9-15, which are patentable at least due to their dependency from claim 8, for the reasons noted above, recite additional features of the invention and are also separately patentable over the prior art of record. For example, it is clear that NAKAMURA et al. lacks at least the additional subject matter recited in claims 10 and 11.

Claim 16 includes, inter alia, " an AF drive unit which is provided separately from said sighting telescope, wherein said AF drive unit can be mounted to and dismounted from a body of said surveying instrument; said AF drive unit including: a sensor which receives part of a light bundle which is passed through an objective lens of said sighting telescope; a drive mechanism which drives a focusing lens group of said sighting telescope along an optical axis thereof; a controller which inputs sensor data output from said sensor to control the operation of said drive mechanism in accordance with said input sensor data so as to focus said sighting telescope on said sighting object; and a driving force transmitting device which transmits a driving force generated by said drive mechanism to said focusing lens group in a state where said AF drive unit is mounted to said body of said surveying instrument."

Applicants submit that NAKAMURA et al. fails to disclose an AF drive unit which is *detachable* from a surveying instrument body, *which AF drive unit includes* a *sensor* which receives a light bundle passed through an objective lens of a sighting telescope, a *drive mechanism* which drives a focusing lens group of the sighting telescope, a *controller* which controls the drive mechanism in accordance with sensor data to focus the sighting telescope, and a *driving force transmitting device* which transmits a driving force generated by the drive mechanism to the focusing lens group.

In this regard, Applicants note that NAKAMURA et al. discloses different embodiments having detachable AF sensor units 21 and 211. However, Applicants submit that none of the embodiments disclosed in NAKAMURA et al. include a *detachable AF drive unit that includes a sensor, a drive mechanism, a controller and a driving force transmitting device.* While AF sensor units 21 and 211 each include a sensor, they clearly do not include *a drive mechanism* or *a driving force transmitting device.* In contrast, claim 16 recites a *detachable AF drive unit* which includes both *a drive mechanism* and *a driving force transmitting device.* Note, for example, the embodiments shown in Figures 10 through 16 of the present application.

Applicants also submit that dependent claims 17-30, which are patentable at least due to their dependency from claim 16, for the reasons noted above, recite additional features of the invention and are also separately patentable over the prior art of record.

For example, it is clear that NAKAMURA et al. lacks at least the additional subject matter recited in claims 19-22, 27 and 28.

Accordingly, Applicants submit that the rejection of claims 1-30 under 35 U.S.C. § 102(b) is improper for each, and certainly for all, of the above reasons. Applicants respectfully request reconsideration and withdrawal of the rejection, and an early indication of the allowance of these claims.

SUMMARY AND CONCLUSION

Entry and consideration of the present amendment, reconsideration of the outstanding Official Action, and allowance of the present application and all of the claims therein are respectfully requested and now believed to be appropriate.

Applicants have made a sincere effort to place the present application in condition for allowance and believe that they have now done so.

Any amendments to the claims that have been made in this amendment, which do not narrow the scope of the claims, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered cosmetic in nature, and to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should there be any questions or comments, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
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MARKED-UP COPY OF THE CLAIMS

1. (Once Amended) A surveying instrument comprising:

a sighting telescope optical system through which a sighting object can be sighted;

a distance measuring system which measures a distance to said sighting object, and outputs first data;

a phase detection autofocus system which detects a focus state of an image of said sighting object on a reference focal plane, and outputs second data;

a controller which determines reliability of the said first data and said second data; and

an AF driver which moves a focusing lens of said sighting telescope optical system to bring said sighting object into focus in accordance with one of said first data and said second data which has been determined to be reliable by said controller.

3. (Once Amended) The surveying instrument according to claim 1, [further comprising a] wherein said controller [which] provides a consecutive autofocus mode in which said sighting object is brought into focus [automatically consecutively] repeatedly via said AF driver, and a consecutive distance measurement mode in which said distance to said sighting object is [consecutively] repeatedly measured via said distance measuring

system[;], and

wherein said consecutive autofocus mode starts at the same time as said consecutive distance measurement mode [is started].

4. (Once Amended) The surveying instrument according to claim 1, [further comprising a] wherein said controller [which] drives said AF driver to move said focusing lens to a predetermined position [thereof] so that an object at a predetermined distance is in focus when said sighting object is unable to be brought into focus in [the case of] a measurement mode in which a target is set at an arbitrary point.

8. (Once Amended) A surveying instrument comprising:

a sighting telescope optical system through which a sighting object can be sighted;

a distance measuring system which measures a distance to said sighting object; [and]

a phase detection autofocus system which detects a focus state of an image of said sighting object on a reference focal plane; [and]

an AF driver which moves a focusing lens of said sighting telescope optical system to bring said sighting object into focus in accordance with an output of said phase detection autofocus system;

a selector for setting a consecutive distance measurement mode in which said distance measuring system performs plural measurements of distances to said sighting object; and

a controller which coordinates focusing operations of said AF driver with distance measuring operations of said distance measuring system in the consecutive distance measurement mode.

10. (Once Amended) The surveying instrument according to claim 8, [further comprising] wherein said selector comprises a start button, [wherein] and the coordinated focusing operations of said AF driver and distance measuring operations of said distance measuring system in the consecutive distance measurement mode are initiated by [said distance measuring system and said AF driver operate consecutively upon] a single-push operation of said start button.

11. (Once Amended) The surveying instrument according to claim 8, [further comprising a controller which provides] wherein said selector sets a consecutive autofocus mode in which [said sighting object is brought into focus automatically consecutively via] said AF driver repeatedly brings said sighting object into focus, and [a consecutive distance measurement mode in which said distance to said sighting object is

consecutively measured via said distance measuring system;]

wherein said consecutive autofocus mode starts at the same time as said consecutive distance measurement mode [is started].

12. (Once Amended) The surveying instrument according to claim 8, [further comprising a] wherein said controller [which] drives said AF driver to move said focusing lens to a predetermined position [thereof] so that an object at a predetermined distance is in focus when said sighting object is unable to be brought into focus in [the case of] a measurement mode in which a target is set at an arbitrary point.

29. (Once Amended) The surveying instrument according to claim 17, wherein said body of said surveying instrument comprises said sighting telescope;

wherein said sighting telescope comprises an erecting optical system positioned behind said focusing lens group; and

wherein said light guide comprises a beam splitting optical member attached to a surface of said [beam splitting] erecting optical system [member].